

Stainless steel solid wire

Classification

AWS A5.9 : ER308LSi
ISO 14343-A : G 19 9 L Si

General description

Solid wire with extra low carbon for welding austenitic CrNi-steels
With increased silicon for improved wettability

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Approvals

ABS	BV	DNV	GL	LR	TÜV
ER308LSi	308L	308L	4306S	304L S	+

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo
0.020	1.7	0.8	20	10	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						-20°C	-196°C
Typical values	M12	AW	420	570	35	85	55

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNi19 11		1.4306	(TP)304 L CF-3	S30403 J92500
	X2CrNi18 10		1.4311	(TP)304LN 302, 304	S30453 S30400
Medium carbon (C > 0.03%)					
	X4CrNi18 10		1.4301	(TP)304	S30409
		GX5CrNi19 10	1.4308	CF-8	J92600
Ti,Nb stabilized					
	X6CrNiTi18 10		1.4541	(TP)321 (TP)321H	S32100 S32109
	X6 CrNiNb 18 10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19 10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)			
	0.8	1.0	1.2	1.6
5 kg plastic spool S200	X			
15 kg spool BS300	X	X	X	X
Other sizes and packaging on request				

LNM 304LSi: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER308LSi
ISO 14343-A : W 19 9 L Si

General description

**Solid rod with extra low carbon for welding austenitic CrNi-steels
With increased silicon for improved wettability**

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

ABS	DNV	LR	TÜV
ER 308LSi	308L	+	+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.6	0.8	20	10	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-196°C
Typical values	I1	AW	390	590	36	120	50

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNi19 11		1.4306	(TP)304 L CF-3	S30403 J92500
	X2CrNi18 10		1.4311	(TP)304LN 302, 304	S30453 S30400
Medium carbon (C > 0.03%)					
	X4CrNi18 10		1.4301	(TP)304	S30409
		GX5CrNi19 10	1.4308	CF-8	J92600
Ti-,Nb stabilized					
	X6CrNiTi18 10		1.4541	(TP)321 (TP)321H	S32100 S32109
	X6 CrNiNb 18 10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19 10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)					
	1.0	1.2	1.6	2.0	2.4	3.2
2 and 10 kg tube	X	X	X	X	X	X
Other sizes and packaging on request						

LNT 304LSi: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9 : ER308L
ISO 14343-A : G 19 9 L

General description

Solid wire with extra low carbon for welding austenitic CrNi-steels
High resistance to intergranular corrosion and oxidizing environments

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo
0.010	1.6	0.5	20	10	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						-20°C	-196°C
Typical values	M12	AW	390	590	35	95	60

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNi19 11		1.4306	(TP)304 L CF-3	S30403 J92500
	X2CrNiN18 10		1.4311	(TP)304LN 302, 304	S30453 S30400
Medium carbon (C > 0.03%)					
	X4CrNi18 10		1.4301	(TP)304	S30409
		GX5CrNi19 10	1.4308	CF-8	J92600
Ti-,Nb stabilized					
	X6CrNiTi18 10		1.4541	(TP)321 (TP)321H	S32100/ S32109
	X6 CrNiNb 18 10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19 10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)
	1.0
15 kg spool BS300	X
Other sizes and packaging on request	

LNM 304L: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER308L
ISO 14343-A : W 19 9 L

General description

Solid rod with extra low carbon for welding austenitic CrNi-steels
High resistance to intergranular corrosion and oxidizing environments

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

TÜV
+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.6	0.5	20	10	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-196°C
Typical values	I1	AW	390	590	35	120	50

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNi19 11		1.4306	(TP)304 L CF-3	S30403 J92500
	X2CrNi18 10		1.4311	(TP)304LN 302, 304	S30453 S30400
Medium carbon (C > 0.03%)					
	X4CrNi18 10		1.4301	(TP)304	S30409
		GX5CrNi19 10	1.4308	CF-8	J92600
Ti-,Nb stabilized					
	X6CrNiTi18 10		1.4541	(TP)321 (TP)321H	S32100/ S32109
	X6 CrNiNb 18 10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19 10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)			
	1.6	2.0	2.4	3.2
5 and 10 kg tube	X	X	X	X
Other sizes and packaging on request				

LNT 304L: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9	: ER347Si
ISO 14343-A	: G 19 9 NbSi

General description

Solid wire for welding Ti or Nb stabilized stainless CrNi-steels
High resistance to intergranular corrosion and oxidizing environments

Shielding gases (acc. ISO 14175)

M12	Mixed gas Ar+ 0.5-5% CO ₂
M13	Mixed gas Ar+ 0.5-3% O ₂

Approvals

LR	TÜV
+	+

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo	Nb
0.04	1.3	0.9	19.2	9.9	0.30	0.6

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-196°C
Typical values	M12	AW	460	650	35	100	40

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Ti,Nb stabilized					
	X6CrNiTi 18-10		1.4541	(TP)321 (TP)321H	S32100 S32109
	X6 CrNiNb 18-10		1.4550	(TP)347 (TP)347h	S34700 S34709
		GX5 CrNiNb 19-10	1.4552	CF-8C	J92710
Non stabilized					
	X4 CrNi 18-10		1.4301	302 (TP)304	S30400
	X2 CrNi 19-11		1.4306	(TP)304L	S30403
		GX5 CrNi 19-10	1.4308	CF-8	J92600
			1.4312	(TP)304H	S30409

Packaging and available sizes

Unit type	Diameter (mm)		
	0.8	1.0	1.2
15 kg spool BS300	X	X	X
Other sizes and packaging on request			

LNM 347Si: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER347Si
ISO 14343-A : W 19 9 NbSi

General description

Solid rod for welding Ti or Nb stabilized stainless CrNi-steels
High resistance to intergranular corrosion and oxidizing environments

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

TÜV
+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo	Nb
0.04	1.5	0.8	19.5	9.5	0.30	0.6

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-196°C
Typical values	I1	AW	400	650	35	80	45

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Ti,Nb stabilized					
	X6CrNiTi 18-10		1.4541	(TP)321 (TP)321H	S32100 S32109
	X6 CrNiNb 18-10		1.4550	(TP)347 (TP)347h	S34700 S34709
		GX5 CrNiNb 19-10	1.4552	CF-8C	J92710
Non stabilized					
	X4 CrNi 18-10		1.4301	302 (TP)304	S30400
	X2 CrNi 19-11		1.4306	(TP)304L	S30403
		GX5 CrNi 19-10	1.4308	CF-8	J92600
			1.4312	(TP)304H	S30409

Packaging and available sizes

Unit type	Diameter (mm)			
	1.6	2.0	2.4	3.2
2 and 10 kg tube	X	X	X	X
Other sizes and packaging on request				

LNT 347Si: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER316L
ISO 14343-A : W 19 12 3 L

General description

Solid rod with extra low carbon for welding austenitic CrNiMo-steels
High resistance to intergranular corrosion and general corrosion conditions

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.5	0.5	18.5	12	2.7

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
						+20°C	-120°C	-196°C
Typical values	I1	AW	400	620	35	100	80	40

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNiMo17 12 2		1.4404	(TP)316L CF-3M	S31603 J92800
	X2CrNiMo18 14 3		1.4435	(TP)316L	S31603
	X2CrNiMoN 17 11 2		1.4406	(TP)316LN	S31653
	X2CrNiMoN 17 13 3		1.4429		
Medium carbon (C > 0.03%)					
	X4 CrNiMo 17 12 2		1.4401	(TP)316	S31600
	X4 CrNiMo 17 13 3		1.4436		
		GX5 CrNiMo 19-11	1.4408	CF 8M	J92900
Ti-,Nb stabilized					
	X6 CrNiMoTi 17 12 2		1.4571	316 Ti	S31635
	X6 CrNiMoNb 17 12 2		1.4580	316 Cb	S31640
	X6 CrNiNb 18-10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19-10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)			
	1.6	2.0	2.4	3.2
10 kg tube	X	X	X	X

Other sizes and packaging on request

LNT 316L: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9	: ER316LSi
ISO 14343-A	: G 19 12 3 LSi

General description

Solid wire with extra low carbon for welding stainless CrNiMo-steels

See also LNM 316L, high silicon for improved wettability

Shielding gases (acc. ISO 14175)

M12	Mixed gas Ar+ 0.5-5% CO ₂
M13	Mixed gas Ar+ 0.5-3% O ₂

Approvals

ABS	BV	DNV	GL	LR	TÜV
ER316LSi	316L	316L	4571S	316L S	+

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo
0.010	1.6	0.8	18.5	12.2	2.5

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
						+20°C	-120°C	-196°C
Typical values	M12	AW	420	620	39	150	70	45

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNiMo17 12 2		1.4404	(TP)316L CF-3M	S31603 J92800
	X2CrNiMo18 14 3		1.4435	(TP)316L	S31603
	X2CrNiMoN 17 11 2		1.4406	(TP)316LN	S31653
	X2CrNiMoN 17 13 3		1.4429		
Medium carbon (C > 0.03%)					
	X4 CrNiMo 17 12 2		1.4401	(TP)316	S31600
	X4 CrNiMo 17 13 3		1.4436		
	GX5 CrNiMo 19-11		1.4408	CF 8M	J92900
Ti-,Nb stabilized					
	X6 CrNiMoTi 17 12 2		1.4571	316 Ti	S31635
	X6 CrNiMoNb 17 12 2		1.4580	316 Cb	S31640
	X6 CrNiNb 18-10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19-10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)			
	0.8	1.0	1.2	1.6
5 kg plastic spool S200	X	X		
15 kg spool BS300	X	X	X	X
Other sizes and packaging on request				

LNM 316LSi: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER316LSi
ISO 14343-A : W 19 12 3 LSi

General description

Solid rod with extra low carbon for welding stainless CrNiMo-steels
See also LNT 316L, high silicon for improved wettability

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

ABS	DNV	LR	TÜV
ER 316LSi	316L MS	+	+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.7	0.8	18.5	12.2	2.7

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-196°C
Typical values	I1	AW	400	620	35	100	40

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNiMo17 12 2		1.4404	(TP)316L CF-3M	S31603 J92800
	X2CrNiMo18 14 3		1.4435	(TP)316L	S31603
	X2CrNiMoN 17 11 2		1.4406	(TP)316LN	S31653
	X2CrNiMoN 17 13 3		1.4429		
Medium carbon (C > 0.03%)					
	X4 CrNiMo 17 12 2		1.4401	(TP)316	S31600
	X4 CrNiMo 17 13 3		1.4436		
	GX5 CrNiMo 19-11		1.4408	CF 8M	J92900
Ti-,Nb stabilized					
	X6 CrNiMoTi 17 12 2		1.4571	316 Ti	S31635
	X6 CrNiMoNb 17 12 2		1.4580	316 Cb	S31640
	X6 CrNiNb 18-10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19-10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)					
	1.0	1.2	1.6	2.0	2.4	3.2
2,5 and 10 kg tube	X	X	X	X	X	X
Other sizes and packaging on request						

LNT 316LSi: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9 : ER318*
ISO 14343-A : G 19 12 3 NbSi

* Nearest classification

General description

Solid wire for welding Ti or Nb stabilized stainless CrNiMo-steels
High resistance to intergranular corrosion and general corrosion conditions

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Approvals

TÜV
+

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo	Nb
0.04	1.4	0.85	18.9	11.7	2.7	0.5

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) +20°C
Typical values	M12	AW	410	630	35	100

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A35	UNS
Extra low carbon (C < 0.03%)					
	X2 CrNiMo 17-12-2		1.4404	(TP)316L CF-3M	S31603 J92800
	X2 CrNiMo 18-14-3		1.4435	(TP)316L	S31603
	X2 CrNiMoN 17-11-2		1.4406	(TP)316LN	S31653
	X2 CrNiMoN 17-13-3		1.4429		
Medium carbon (C > 0.03%)					
	X4 CrNiMo 17-12-2		1.4401	(TP)316	S31600
	X4 CrNiMo 17-13-3		1.4436		
		GX5 CrNiMo19-11	1.4408	CF 8M	J92900
Ti,Nb stabilized					
	X6 CrNiMoTi 17-12-2		1.4571	316Ti	S31635
	X6 CrNiMoNb 17-12-2		1.4580	316 Cb	S31640
	X6 CrNiNb 18-10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19-10	1.4552	Cf-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)			
	0.8	1.0	1.2	1.6
15 kg spool BS300	X	X	X	X

Other sizes and packaging on request

LNМ 318Si: rev. EN 21

Stainless steel solid rod

Classification

AWS A5.9 : ER318*
ISO 14343-A : W 19 12 3 NbSi

* Nearest classification

General description

Solid rod for welding Ti or Nb stabilized stainless CrNiMo-steels
High resistance to intergranular corrosion and general corrosion conditions

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

TÜV

+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo	Nb
0.04	1.5	0.8	19.0	12.0	2.7	0.6

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-196°C
Typical values	I1	AW	420	680	35	70	45

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A35	UNS
Extra low carbon (C < 0.03%)					
	X2 CrNiMo 17-12-2		1.4404	(TP)316L CF-3M	S31603 J92800
	X2 CrNiMo 18-14-3		1.4435	(TP)316L	S31603
	X2 CrNiMoN 17-11-2		1.4406	(TP)316LN	S31653
	X2 CrNiMoN 17-13-3		1.4429		
Medium carbon (C > 0.03%)					
	X4 CrNiMo 17-12-2		1.4401	(TP)316	S31600
	X4 CrNiMo 17-13-3		1.4436		
		GX5 CrNiMo19-11	1.4408	CF 8M	J92900
Ti-,Nb stabilized					
	X6 CrNiMoTi 17-12-2		1.4571	316Ti	S31635
	X6 CrNiMoNb 17-12-2		1.4580	316 Cb	S31640
	X6 CrNiNb 18-10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19-10	1.4552	Cf-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)				
	1.2	1.6	2.0	2.4	3.2
2 and 10 kg tube	X	X	X	X	X
Other sizes and packaging on request					

LNT 318Si: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

ISO 14343-A : G 18 16 5 N L*

* Nearest classification

General description

Solid wire for welding AISI 317L, 317LN or equivalent stainless steels
 For welding 316L if increased molybdenum content is important
 High resistance to pitting, intergranular and stress corrosion
 Fully austenitic weld metal

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
 M13 Mixed gas Ar+ 0.5-3% O₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo	N
0.02	7	0.7	19.1	16.9	4.6	0.15

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
						+20°C	-120°C	-196°C
Typical values	M12	AW	410	620	30	120	80	50

Materials to be welded

Steel grades	EN10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI	UNS
Fully austenitic CrNiMo corrosion resistant steels					
	X2 CrNiMoN 17-11-2		1.4406	(TP)316LN	S31653
	X2 CrNiMoN 17-13-3		1.4429	(TP)316LN	S31653
	X2 CrNiMo 18-14-3		1.4435	(TP)316L	S31603
	X2 CrNiMo 18-15-4		1.4438	317L	S31725
	X2 CrNiMoN 17-13-5		1.4439	317LN	S31726
	G-X2 CrNiMoN 17-13-4	GX2 CrNiMo 17-13-4	1.4446		
	G-X6 CrNiMo 17-13	GX6 CrNiMo 17-13	1.4448		

Packaging and available sizes

Unit type	Diameter (mm)		
	0.8	1.0	1.2
15 kg spool BS300	X	X	X
Other sizes and packaging on request			

LNM 4439Mn: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

ISO 14343-A : W 18 16 5 N L*

* Nearest classification

General description

Solid rod for welding AISI 317L, 317LN or equivalent stainless steels
 For welding 316L if increased molybdenum content is important
 High resistance to pitting, intergranular and stress corrosion
 Fully austenitic weld metal

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo	N
0.02	7	0.4	18.0	16.0	4.5	0.15

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) -196°C
Typical values	I1	AW	440	650	35	80

Materials to be welded

Steel grades	EN10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI	UNS
Fully austenitic CrNiMo corrosion resistant steels					
	X2 CrNiMoN 17-11-2		1.4406	(TP)316LN	S31653
	X2 CrNiMoN 17-13-3		1.4429	(TP)316LN	S31653
	X2 CrNiMo 18-14-3		1.4435	(TP)316L	S31603
	X2 CrNiMo 18-15-4		1.4438	317L	S31725
	X2 CrNiMoN 17-13-5		1.4439	317LN	S31726
	G-X2 CrNiMoN 17-13-4	GX2 CrNiMo 17-13-4	1.4446		
	G-X6 CrNiMo 17-13	GX6 CrNiMo 17-13	1.4448		

Packaging and available sizes

Unit type	Diameter (mm)			
	1.6	2.0	2.4	3.2
2 and 5 kg tube	X	X	X	X
Other sizes and packaging on request				

LNT 4439Mn: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9 : ER316LMn
ISO 14343-A : G 20 16 3 Mn L

General description

Solid wire for welding fully austenitic CrNiMnMo stainless steels and low temperature steels
Not susceptible for hot cracking

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Approvals

TÜV
+

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo	N
0.015	7	0.35	20	16	2.8	0.15

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) -196°C
Typical values	M12	AW	400	600	30	50

Materials to be welded

Steel grades	Standard		Mat. Nr	ASTM/ACI	UNS
N-alloyed stainless CrNi- and CrNiMo steels					
	EN 10088-1/-2	X2 CrNiN 18-10	1.4311	(TP)304LN	S30453
		X2 CrNiMoN 17-11-2	1.4406	(TP)316LN	S31653
		X2 CrNiMoN 17-13-3	1.4429		
		X2 CrNiMoN 17-13-5	1.4439	317LN	S31726
Austenitic anti-magnetic steels					
	SEW 390	X2 CrNiMoN 22-15	1.3951		
		X2 CrNiMoN18-14-3	1.3952		
		X2 CrNiMo 18-15	1.3953		
		X8 CrMnNi 18-8	1.3965		
Low temperature steels					
	SEW 685	GX6 CrNi 18-10	1.6902		
		GX5 CrNiNb 18-10	1.6905		
	EN 10028-4	12 Ni 14	1.5637		
		X12 Ni 5	1.5680		

Packaging and available sizes

Unit type	Diameter (mm)	
	1.2	1.6
15 kg spool BS300	X	X
Other sizes and packaging on request		

LNM 4455: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER316LMn
ISO 14343-A : W 20 16 3 Mn L

General description

Solid rod for welding fully austenitic CrNiMnMo stainless steels and low temperature steels
Not susceptible for hot cracking

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

TÜV
+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo	N
0.025	7.5	0.4	19	15	2.7	0.15

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) -196°C
Typical values	I1	AW	430	650	35	75

Materials to be welded

Steel grades	Standard		Mat. Nr	ASTM/ACI	UNS
N-alloyed stainless CrNi-and CrNiMo steels					
	EN 10088-1/-2	X2 CrNiN 18-10	1.4311	(TP)304LN	S30453
		X2 CrNiMoN 17-11-2	1.4406	(TP)316LN	S31653
		X2 CrNiMoN 17-13-3	1.4429		
		X2 CrNiMoN 17-13-5	1.4439	317LN	S31726
Austenitic anti-magnetic steels					
	SEW 390	X2 CrNiMoN 22-15	1.3951		
		X2 CrNiMoN18-14-3	1.3952		
		X2 CrNiMo 18-15	1.3953		
		X8 CrMnNi 18-8	1.3965		
Low temperature steels					
	SEW 685	GX6 CrNi 18-10	1.6902		
		GX5 CrNiNb 18-10	1.6905		
	EN 10028-4	12 Ni 14	1.5637		
		X12 Ni 5	1.5680		

Packaging and available sizes

Unit type	Diameter (mm)	
	2.0	2.4
2 and 10 kg tube	X	X
Other sizes and packaging on request		

LNT 4455: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

ISO 14343-A : G 25 22 2 N L

General description

Solid wire for welding high CrNiMo-alloyed austenitic steels of type 25/22/2
Excellent resistance to strong oxidizing and moderate reducing conditions
Especially for urea applications

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
 M13 Mixed gas Ar+ 0.5-3% O₂

Approvals

TÜV
 +

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo	N
0.018	5.0	0.4	25.0	23.0	2.0	0.15

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) +20°C
Typical values	M12	AW	360	620	30	80

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	ASTM / ACI	UNS
Fully austenitic corrosion resistant CrNiMo steels				
	X1 CrNiMoN 25-25-2	1.4465		
	X3 CrNiMoTi 25-25	1.4577		
	X2 CrNi 19-11	1.4306	(TP)304L	S30403
			CF-3	J92500
	X2 CrNiN 18-10	1.4311	(TP)304LN	S30453
			310S	S31008

Also very well applicable for build-up welding on low alloyed steel, such as pipe plates
 Buffer layer -120 ...+350°C

Packaging and available sizes

Unit type	Diameter (mm)		
	0.8	1.0	1.2
15 kg spool BS300	X	X	X
Other sizes and packaging on request			

LNM 4465: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

ISO 14343-A : W 25 22 2 N L

General description

Solid rod for welding high CrNiMo-alloyed austenitic steels of type 25/22/2
Excellent resistance to strong oxidizing and moderate reducing conditions
Especially for urea applications

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

TÜV

+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo	N
0.018	5.0	0.4	25.0	23.0	2.0	0.15

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) -10°C
Typical values	I1	AW	360	620	30	80

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	ASTM / ACI	UNS
Fully austenitic corrosion resistant CrNiMo steels				
	X1 CrNiMoN 25-25-2	1.4465		
	X3 CrNiMoTi 25-25	1.4577		
	X2 CrNi 19-11	1.4306	(TP)304L	S30403
			CF-3	J92500
	X2 CrNiN 18-10	1.4311	(TP)304LN	S30453
			310S	S31008

Also very well applicable for build-up welding on low alloyed steel, such as pipe plates
Buffer layer -120 ...+350°C

Packaging and available sizes

Unit type	Diameter (mm)	
	2.0	2.4
2 and 5 kg tube	X	X
Other sizes and packaging on request		

LNT 4465: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9 : ER385
ISO 14343-A : G 20 25 5 Cu L

General description

Solid wire for welding of fully austenitic steels of type 20%Cr / 25%Ni / 4.5%Mo / 1.5%Cu
Highly corrosion resistant in sulphuric and phosphoric acid

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Approvals

TÜV

+

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo	Cu
0.009	1.7	0.3	20	25	4.4	1.5

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) +20°C
Typical values	M12	AW	350	610	35	100

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr
Fully austenitic NiCrMoCu and CrNiMoCu steels			
		GX7 NiCrMoCuNb 25-20	1.4500
	X5 NiCrMoCuTi 20 18		1.4506
		G-X2 NiCrMoCuN 20 18	1.4531
		G-X2 NiCrMoCuN 25 20	1.4536
	X1 NiCrMoCuN 25 20 5		1.4539
		G-X7 CrNiMoCuNb 18 18	1.4585
	X5 NiCrMoCuNb 22 18		1.4586

Packaging and available sizes

Unit type	Diameter (mm)		
	0.8	1.0	1.2
15 kg spool BS300	X	X	X
Other sizes and packaging on request			

LNM 4500: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER385
ISO 14343-A : W 20 25 5 Cu L

General description

Solid rod for welding of fully austenitic steels of type 20%Cr / 25%Ni / 4.5%Mo / 1.5%Cu
Highly corrosion resistant in sulphuric and phosphoric acid

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

TÜV

+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo	Cu
0.013	2.0	0.4	20	25	4.5	1.5

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) -196°C
Typical values	I1	AW	380	560	35	80

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr
Fully austenitic NiCrMoCu and CrNiMoCu steels			
		GX7 NiCrMoCuNb 25-20	1.4500
	X5 NiCrMoCuTi 20 18		1.4506
		G-X2 NiCrMoCuN 20 18	1.4531
		G-X2 NiCrMoCuN 25 20	1.4536
	X1 NiCrMoCuN 25 20 5		1.4539
		G-X7 CrNiMoCuNb 18 18	1.4585
	X5 NiCrMoCuNb 22 18		1.4586

Packaging and available sizes

Unit type	Diameter (mm)		
	1.6	2.0	2.4
2 and 5 kg tube	X	X	X
Other sizes and packaging on request			

LNT 4500: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

No EN or AWS standard

General description

Solid wire for welding Lean Duplex stainless steels

Corrosion resistance is equal to 316L in most applications

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂

M13 Mixed gas Ar+ 0.5-3% O₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo	N	P	S
0.020	1.7	0.7	23.0	7.0	0.3	0.14	0.020	0.004

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-20°C
Typical values	M12	AW	525	710	25	170	150

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	UNS
Duplex stainless steels	X2 CrNiMoN 21 5 1	1.4162	S32101
	X2 CrNiN 23-4	1.4362	S32304

Packaging and available sizes

Unit type	Diameter (mm)	
	1.0	1.2
15 kg spool BS300	X	X
Other sizes and packaging on request		

LNM 4362: rev. EN 03

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9 : ER2209
ISO 14343-A : G 22 9 3 N L

General description

Solid wire for welding duplex stainless steels
High resistance to general corrosion, pitting and stress corrosion conditions

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Approvals

BV	GL	TÜV
2209	4462S	+

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo	N
0.018	1.5	0.5	22.7	8.5	3.0	0.15

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-46°C
Typical values	M12	AW	625	810	28	110	40

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	UNS
Duplex stainless steels			
	X2 CrNiMoN 22 5 3	1.4462	S31803
		1.4417	S31500
	X2 CrNiN 23-4	1.4362	S32304
	X3 CrNiMoN 27-5-2	1.4460	S31200
	X2 CrNiMoN 21 5 1	1.4162	S32101

Dissimilar joints such as un- and low alloyed steel to duplex stainless steel

Packaging and available sizes

Unit type	Diameter (mm)			
	0.8	1.0	1.2	1.6
15 kg spool BS300	X	X	X	X
Other sizes and packaging on request				

LNM 4462: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER2209
ISO 14343-A : W 22 9 3 N L

General description

Solid rod for welding duplex stainless steels
High resistance to general corrosion, pitting and stress corrosion conditions

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

TÜV
+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo	N
0.015	1.6	0.5	22.5	8.5	3.0	0.15

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
						+20°C	-20°C	-60°C
Typical values	I1	AW	600	800	28	85	60	45

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	UNS
Duplex stainless steels			
	X2 CrNiMoN 22 5 3	1.4462	S31803
		1.4417	S31500
	X2 CrNiN 23-4	1.4362	S32304
	X3 CrNiMoN 27-5-2	1.4460	S31200
	X2 CrNiMoN 21 5 1	1.4162	S32101

Dissimilar joints such as un- and low alloyed steel to duplex stainless steel

Packaging and available sizes

Unit type	Diameter (mm)			
	1.6	2.0	2.4	3.2
2 and 10 kg tube	X	X	X	X
Other sizes and packaging on request				

LNT 4462: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

LNМ Zeron 100X

Stainless steel solid wire

Classification

AWS A5.9 : ER2594
ISO 14343-A : G 25 9 4 N L

General description

Solid wire for welding Zeron 100® and other super duplex stainless steel grades
High resistance to pitting and crevice corrosion in seawater

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo	Cu	W	N
0.015	0.7	0.4	25.0	9.8	3.7	0.6	0.7	0.22

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						-20°C	-46°C
Typical values	M12	AW	655	845	23	75	55

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI A276/A351/A473	UNS
Regular and super duplex stainless steels					
	X2 CrNiMoN 25-7-4		1.4410		
	X4 CrNiMoN 27-5-2		1.4460		
	X2 CrNiMoN 22-5-3		1.4462	2205	S31803
		GX6 CrNiMo 24-8-2	1.4463		
				CD-4MCu	S32550
				Zeron 100	S32760

Super duplex stainless steel grades: chemical composition approximately:
24-27% Cr, 6-9% Ni, 3-4% Mo, 0.10-0.25% N alloyed also with Cu and/or W

Packaging and available sizes

Unit type	Diameter (mm)		
	1.0	1.2	1.6
12.5 kg spool S300	X	X	X
Other sizes and packaging on request			

LNМ Zeron 100X: rev. EN 23

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

LNT Zeron 100X

Stainless steel solid rod

Classification

AWS A5.9 : ER2594
ISO 14343-A : W 25 9 4 N L

General description

Solid rod for welding Zeron 100® and other super duplex stainless steel grades
High resistance to pitting and crevice corrosion in seawater

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

TÜV
+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo	Cu	W	N
0.020	0.6	0.4	25.0	9.3	3.6	0.65	0.7	0.22

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						-20°C	-46°C
Typical values	I1	AW	680	885	26	80	60

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI A276/A351/A473	UNS
Regular and super duplex stainless steels					
	X2 CrNiMoN 25-7-4		1.4410		
	X4 CrNiMoN 27-5-2		1.4460		
	X2 CrNiMoN 22-5-3		1.4462	2205	S31803
		GX6 CrNiMo 24-8-2	1.4463		
				CD-4MCu	S32550
				Zeron 100	S32760

Super duplex stainless steel grades: chemical composition approximately:
24-27% Cr, 6-9% Ni, 3-4% Mo, 0.10-0.25% N alloyed also with Cu and/or W

Packaging and available sizes

Unit type	Diameter (mm)		
	1.6	2.4	3.2
2 kg tube	X	X	X
Other sizes and packaging on request			

LNT Zeron 100X: rev. EN 23

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9	: ER309LSi
ISO 14343-A	: G 23 12 L Si

General description

Solid wire for welding stainless steel to carbon steel
With high silicon for improved wettability

Shielding gases (acc. ISO 14175)

M12	Mixed gas Ar+ 0.5-5% CO ₂
M13	Mixed gas Ar+ 0.5-3% O ₂

Approvals

ABS	BV	DB	DNV	GL	LR	TÜV
ER309LSi	309L	+	309	4332S	SS/CMn S	+

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo
0.010	1.8	0.8	23.3	13.8	0.14

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						-20°C	-120°C
Typical values	M12	AW	430	565	35	96	65

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
--------------	---------------	---------	----------------------------	-----

Corrosion resistant cladsteels

X2 CrNiN 18-10	1.4311	(TP)304LN	S30453
X2 CrNi 19-11	1.4306	(TP)304L	S30403
		CF-3	J92500
X4 CrNi 18-10	1.4301	(TP)304	S30400

Dissimilar metals (mild and low alloyed steel to stainless steel)

Build-up welding on mild and low alloyed steel

Packaging and available sizes

Unit type	Diameter (mm)			
	0.8	1.0	1.2	1.6
15 kg spool BS300	X	X	X	X
Other sizes and packaging on request				

LNM 309LSi: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER309LSi
ISO 14343-A : W 23 12 L Si

General description

Solid rod for welding stainless steel to carbon steel
With high silicon for improved wettability

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

ABS	LR	TÜV
ER 309LSi	+	+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.6	0.8	23.5	13.0	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) -120°C
Typical values	I1	AW	400	600	35	65

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
--------------	---------------	---------	----------------------------	-----

Corrosion resistant cladsteels

X2 CrNi 18-10	1.4311	(TP)304LN	S30453
X2 CrNi 19-11	1.4306	(TP)304L	S30403
		CF-3	J92500
X4 CrNi 18-10	1.4301	(TP)304	S30400

Dissimilar metals (mild and low alloyed steel to stainless steel)

Build-up welding on mild and low alloyed steel

Packaging and available sizes

Unit type	Diameter (mm)					
	1.0	1.2	1.6	2.0	2.4	3.2
2,5 and 10 kg tube	X	X	X	X	X	X
Other sizes and packaging on request						

LNT 309LSi: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER309L
ISO 14343-A : W 23 12 L

General description

Solid rod for welding stainless steel to carbon steel
Low susceptibility to embrittlement
Minimum 18FN ferrite in weldmetal

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.65	0.35	24	13	0.05

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) +20°C
Typical values	I1	AW	390	600	35	150

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Corrosion resistant cladsteels				
	X2 CrNi 18-10	1.4311	(TP)304LN	S30453
	X2 CrNi 19-11	1.4306	(TP)304L	S30403
			CF-3	J92500
	X4 CrNi 18-10	1.4301	(TP)304	S30400

Dissimilar metals (mild and low alloyed steel to stainless steel)
Build-up welding on mild and low alloyed steel

Packaging and available sizes

Unit type	Diameter (mm)		
	1.6	2.0	2.4
2 and 10 kg tube	X	X	X
Other sizes and packaging on request			

LNT 309LHF: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9 : ER307*
ISO 14343-A : G 18 8 Mn

* Nearest classification

General description

Solid wire for welding Steel with difficult weldability
Often used as a buffer layer in hardfacing applications

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Approvals

TÜV
+

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni
0.08	7.1	0.8	19.2	9

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-120°C
Typical values	M12	AW	400	630	40	80	50

Materials to be welded

Various steel grades, such as:

- Armour plate
- Hardenable steels including steels difficult to weld
- Non-magnetic steels
- Work hardening austenitic manganese steels
- Dissimilar joints (CMn-steels to stainless steels)

Packaging and available sizes

Unit type	Diameter (mm)	
	1.0	1.2
15 kg spool BS300	X	X
Other sizes and packaging on request		

LNМ 307: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER307*
ISO 14343-A : W 18 8 Mn

* Nearest classification

General description

Solid rod for welding Steel with difficult weldability
Often used as a buffer layer in hardfacing applications

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Approvals

TÜV

+

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni
0.08	6.5	0.7	18.5	8.5

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-120°C
Typical values	I1	AW	400	650	35	100	50

Materials to be welded

Various steel grades, such as:

- Armour plate
- Hardenable steels including steels difficult to weld
- Non-magnetic steels
- Work hardening austenitic manganese steels
- Dissimilar joints (CMn-steels to stainless steels)

Packaging and available sizes

Unit type	Diameter (mm)
	2.0
2 kg tube	X
Other sizes and packaging on request	

LNT 307: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9 : ER308H
ISO 14343-A : G 19 9 H

General description

Solid wire for welding austenitic CrNi-steels
Especially for high temperature applications (up to 730°C)
Low sensitivity to precipitation of intermetallic phases

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo
0.05	1.8	0.5	20	10	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)
Typical values	M12	AW	370	590	34

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI	UNS
Medium carbon (C > 0.03%)	X4 CrNi 18-10		1.4301	302 (TP)304	S30400
				(TP)304H	S30409
		GX5 CrNi 19-10	1.4308	CF 8	J92600
			1.4948		

Packaging and available sizes

Unit type	Diameter (mm)	
	1.0	1.2
15 kg spool BS300	X	X
Other sizes and packaging on request		

LNM 304H: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER308H
ISO 14343-A : W 19 9 H

General description

Solid rod for welding austenitic CrNi-steels
Especially for high temperature applications (up to 730°C)
Low sensitivity to precipitation of intermetallic phases

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.05	1.6	0.5	20	10	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) +20°C
Typical values	I1	AW	370	600	35	80

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI	UNS
Medium carbon (C > 0.03%)				302	
	X4 CrNi 18-10		1.4301	(TP)304 (TP)304H	S30400 S30409
		GX5 CrNi 19-10	1.4308	CF 8	J92600
	X6 CrNi 18-10		1.4948		

Packaging and available sizes

Unit type	Diameter (mm)		
	2.0	2.4	3.2
2 and 10 kg tube	X	X	X
Other sizes and packaging on request			

LNT 304H: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

ISO 14343-A	: G 18LNb
ISO 14343-B	: G 430LNb

General description

Solid wire for welding stabilized martensitic stainless steel
High resistance to scaling up to approx. 900°C

Shielding gases (acc. ISO 14175)

M12	Mixed gas Ar+ 0.5-5% CO ₂
M13	Mixed gas Ar+ 0.5-3% O ₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Nb
0.01	0.7	0.4	18	0.3

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)
Typical values	M12	AW	280	460	17

Materials to be welded

Steel grades	EN 10088-1	Mat. Nr
EN 10088-1	Mat. Nr	ASTM/A420
X3CrNb17	1.4511	AISI430
X6CrNb17	1.4511	
X6Cr17	1.4016	
X8Cr17	1.4016	

Packaging and available sizes

Unit type	Diameter (mm)
	1.0
250 kg Accutrak® Drum	X
Other sizes and packaging on request	

LNМ 430LNb: rev. EN 01

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9 : ER309

General description

Solid wire for high temperature applications like industrial furnaces
High resistance to oxidation up to 1050°C

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo
0.05	1.8	0.5	24.0	13.5	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) +20°C
Typical values	M12	AW	400	640	35	110

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI	UNS
		GX30 CrSi6	1.4710		
	X10 CrAl7		1.4713	502	
	X10 CrAl13		1.4724	410/414-TP405-CA15	
		GX40 CrSi13	1.4729		
		GX40 CrSi17	1.4740		
	X10 CrAl18		1.4742	430-TP430-CB30	
	X10 CrAl24		1.4762	TP443	
		GX25 CrNiSi18-9	1.4825		J92502
		GX40 CrNiSi22-9			
	X15 CrNiSi20-12		1.4828	TP309	S30900
		GX25 CrNiSi20-14	1.4832		
	X12 CrNiTi18-9		1.4878		

Packaging and available sizes

Unit type	Diameter (mm)	
	1.0	1.2
15 kg spool BS300	X	X
Other sizes and packaging on request		

LNM 309H: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid wire

Classification

AWS A5.9 : ER310
ISO 14343-A : G 25 20

General description

Solid wire for welding heat resistant Cr- and CrNi-steels (25%Cr-20%Ni)
High resistance to oxidation and scaling up to approx. 1100°C

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo
0.1	1.8	0.45	26	21	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) +20°C
Typical values	M12	AW	355	610	35	110

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI	UNS	
X10 CrAl24			1.4762			
			GX25 CrNiSi18-9			1.4825
			GX40 CrNiSi22-9			1.4826
X15 CrNiSi20-12			1.4828			
			GX25 CrNiSi20-14			1.4832
X15 CrNiSi25-20			1.4841	310S	S31008	
				CK20	J94202	
X12 CrNi25-21			1.4845			
			GX40 CrNiSi 25-20			1.4848

Packaging and available sizes

Unit type	Diameter (mm)		
	0.8	1.0	1.2
15 kg spool BS300	X	X	X
Other sizes and packaging on request			

LNM 310: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Stainless steel solid rod

Classification

AWS A5.9 : ER310
ISO 14343-A : W 25 20

General description

Solid rod for welding heat resistant Cr- and CrNi-steels (25%Cr-20%Ni)
High resistance to oxidation and scaling up to approx. 1100°C

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.1	1.7	0.5	26	21	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) +20°C
Typical values	I1	AW	360	600	35	100

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI	UNS	
X10 CrAl24			1.4762			
			GX25 CrNiSi18-9			1.4825
			GX40 CrNiSi22-9			1.4826
X15 CrNiSi20-12			1.4828			
			GX25 CrNiSi20-14			1.4832
X15 CrNiSi25-20			1.4841	310S	S31008	
				CK20	J94202	
X12 CrNi25-21			1.4845			
			GX40 CrNiSi 25-20			1.4848

Packaging and available sizes

Unit type	Diameter (mm)			
	1.6	2.0	2.4	3.2
2 and 10 kg tube	X	X	X	X
Other sizes and packaging on request				

LNT 310: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Lincoln MIG 308LSi

Stainless steel solid wire

Classification

AWS A5.9 : ER308LSi
ISO 14343-A : G 19 9 LSi

General description

Solid wire with extra low carbon for welding austenitic CrNi-steels
With increased silicon for improved wettability

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo
0.02	1.7	0.8	20	10	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						-20°C	-196°C
Typical values	M12	AW	420	570	45	85	55

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNi19 11		1.4306	(TP)304 L CF-3	S30403 J92500
	X2CrNiN18 10		1.4311	(TP)304LN 302, 304	S30453 S30400
Medium carbon (C > 0.03%)					
	X4CrNi18 10		1.4301	(TP)304	S30409
		GX5CrNi19 10	1.4308	CF-8	J92600
Ti-,Nb stabilized					
	X6CrNiTi18 10		1.4541	(TP)321 (TP)321H	S32100 S32109
	X6 CrNiNb 18 10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19 10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)			
	0.8	1.0	1.2	1.6
15 kg spool BS300	X	X	X	X

Other sizes and packaging on request

Lincoln MIG 308LSi: rev. EN 02

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Lincoln TIG 308LSi

Stainless steel solid rod

Classification

AWS A5.9 : ER308LSi
ISO 14343-A : W 19 9 LSi

General description

Solid rod with extra low carbon for welding austenitic CrNi-steels
With increased silicon for improved wettability

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.6	0.8	20	10	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-196°C
Typical values	I1	AW	390	590	36	120	50

Materials to be welded

Steel grades	EN 10088-1/-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNi19 11		1.4306	(TP)304 L CF-3	S30403 J92500
	X2CrNi18 10		1.4311	(TP)304LN 302, 304	S30453 S30400
Medium carbon (C > 0.03%)					
	X4CrNi18 10		1.4301	(TP)304	S30409
		GX5CrNi19 10	1.4308	CF-8	J92600
Ti-,Nb stabilized					
	X6CrNiTi18 10		1.4541	(TP)321 (TP)321H	S32100 S32109
	X6 CrNiNb 18 10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19 10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)				
	1.2	1.6	2.0	2.4	3.2
5 kg tube	X	X	X	X	X
Other sizes and packaging on request					

Lincoln TIG 308LSi: rev. EN 02

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Lincoln TIG 308L

Stainless steel solid rod

Classification

AWS A5.9 : ER308L
ISO 14343-A : W 19 9 L

General description

Solid rod with extra low carbon for welding austenitic CrNi-steels
High resistance to intergranular corrosion and oxidizing environments

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.6	0.5	20	10	0.2

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-196°C
Typical values	I1	AW	390	590	35	120	50

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNi19 11		1.4306	(TP)304 L CF-3	S30403 J92500
	X2CrNi18 10		1.4311	(TP)304LN 302, 304	S30453 S30400
Medium carbon (C > 0.03%)					
	X4CrNi18 10		1.4301	(TP)304	S30409
		GX5CrNi19 10	1.4308	CF-8	J92600
Ti-,Nb stabilized					
	X6CrNiTi18 10		1.4541	(TP)321 (TP)321H	S32100/ S32109
	X6 CrNiNb 18 10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19 10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)				
	1.2	1.6	2.0	2.4	3.2
5 kg tube	X	X	X	X	X
Other sizes and packaging on request					

Lincoln TIG 308L: rev. EN 02

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Lincoln MIG 316LSi

Stainless steel solid wire

Classification

AWS A5.9	: ER316LSi
ISO 14343-A	: G 19 12 3 LSi

General description

Solid wire with extra low carbon for welding stainless CrNiMo-steels
With increased silicon for improved wettability

Shielding gases (acc. ISO 14175)

M12	Mixed gas Ar+ 0.5-5% CO ₂
M13	Mixed gas Ar+ 0.5-3% O ₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo
0.010	1.6	0.8	18.5	12.2	2.5

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
						+20°C	-120°C	-196°C
Typical values	M12	AW	420	620	35	150	70	40

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNiMo17 12 2		1.4404	(TP)316L CF-3M	S31603 J92800
	X2CrNiMo18 14 3		1.4435	(TP)316L	S31603
	X2CrNiMoN 17 11 2		1.4406	(TP)316LN	S31653
	X2CrNiMoN 17 13 3		1.4429		
Medium carbon (C > 0.03%)					
	X4 CrNiMo 17 12 2		1.4401	(TP)316	S31600
	X4 CrNiMo 17 13 3		1.4436		
	GX5 CrNiMo 19-11		1.4408	CF 8M	J92900
Ti-,Nb stabilized					
	X6 CrNiMoTi 17 12 2		1.4571	316 Ti	S31635
	X6 CrNiMoNb 17 12 2		1.4580	316 Cb	S31640
	X6 CrNiNb 18-10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19-10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)			
	0.8	1.0	1.2	1.6
15 kg spool BS300	X	X	X	X
Other sizes and packaging on request				

Lincoln MIG 316LSi: rev. EN 02

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Lincoln TIG 316LSi

Stainless steel solid rod

Classification

AWS A5.9 : ER316LSi
ISO 14343-A : W 19 12 3 LSi

General description

Solid rod with extra low carbon for welding stainless CrNiMo-steels
With increased silicon for improved wettability

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.7	0.8	18.5	12.2	2.7

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-196°C
Typical values	I1	AW	400	620	35	100	45

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNiMo17 12 2		1.4404	(TP)316L CF-3M	S31603 J92800
	X2CrNiMo18 14 3		1.4435	(TP)316L	S31603
	X2CrNiMoN 17 11 2		1.4406	(TP)316LN	S31653
	X2CrNiMoN 17 13 3		1.4429		
Medium carbon (C > 0.03%)					
	X4 CrNiMo 17 12 2		1.4401	(TP)316	S31600
	X4 CrNiMo 17 13 3		1.4436		
	GX5 CrNiMo 19-11		1.4408	CF 8M	J92900
Ti-,Nb stabilized					
	X6 CrNiMoTi 17 12 2		1.4571	316 Ti	S31635
	X6 CrNiMoNb 17 12 2		1.4580	316 Cb	S31640
	X6 CrNiNb 18-10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19-10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)				
	1.2	1.6	2.0	2.4	3.2
5 kg tube	X	X	X	X	X

Other sizes and packaging on request

Lincoln TIG 316LSi: rev. EN 02

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Lincoln TIG 316L

Stainless steel solid rod

Classification

AWS A5.9 : ER316L
ISO 14343-A : W 19 12 3 L

General description

Solid rod with extra low carbon for welding austenitic CrNiMo-steels
High resistance to intergranular corrosion and general corrosion conditions

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.5	0.5	18.5	12	2.7

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
						+20°C	-120°C	-196°C
Typical values	I1	AW	400	620	35	100	80	40

Materials to be welded

Steel grades	EN 10088-11-2	EN 10213-4	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
Extra low carbon (C < 0.03%)					
	X2CrNiMo17 12 2		1.4404	(TP)316L CF-3M	S31603 J92800
	X2CrNiMo18 14 3		1.4435	(TP)316L	S31603
	X2CrNiMoN 17 11 2		1.4406	(TP)316LN	S31653
	X2CrNiMoN 17 13 3		1.4429		
Medium carbon (C > 0.03%)					
	X4 CrNiMo 17 12 2		1.4401	(TP)316	S31600
	X4 CrNiMo 17 13 3		1.4436		
		GX5 CrNiMo 19-11	1.4408	CF 8M	J92900
Ti-,Nb stabilized					
	X6 CrNiMoTi 17 12 2		1.4571	316 Ti	S31635
	X6 CrNiMoNb 17 12 2		1.4580	316 Cb	S31640
	X6 CrNiNb 18-10		1.4550	(TP)347	S34700
		GX5 CrNiNb 19-10	1.4552	CF-8C	J92710

Packaging and available sizes

Unit type	Diameter (mm)				
	1.2	1.6	2.0	2.4	3.2
5 kg tube	X	X	X	X	X
Other sizes and packaging on request					

Lincoln TIG 316L: rev. EN 02

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Lincoln MIG 309LSi

Stainless steel solid wire

Classification

AWS A5.9 : ER309LSi
ISO 14343-A : G 23 12 LSi

General description

Solid wire for welding stainless steel to carbon steel
With high silicon for improved wettability

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ >0.5-3% O₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni	Mo
0.010	1.8	0.8	23.3	13.8	0.14

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						-20°C	-120°C
Typical values	M12	AW	430	565	35	96	65

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
--------------	---------------	---------	----------------------------	-----

Corrosion resistant cladsteels

X2 CrNiN 18-10	1.4311	(TP)304LN	S30453
X2 CrNi 19-11	1.4306	(TP)304L CF-3	S30403 J92500
X4 CrNi 18-10	1.4301	(TP)304	S30400

Dissimilar metals (mild and low alloyed steel to stainless steel)

Build-up welding on mild and low alloyed steel

Packaging and available sizes

Unit type	Diameter (mm)			
	0.8	1.0	1.2	1.6
15 kg spool BS300	X	X	X	X

Other sizes and packaging on request

Lincoln MIG 309LSi: rev. EN 02

Lincoln TIG 309LSi

Stainless steel solid rod

Classification

AWS A5.9 : ER309LSi
ISO 14343-A : W 23 12 LSi

General description

Solid rod for welding stainless steel to carbon steel
With high silicon for improved wettability

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.6	0.8	23.5	13.0	0.20

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) -46°C
Typical values	I1	AW	400	600	35	65

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
--------------	---------------	---------	----------------------------	-----

Corrosion resistant cladsteels

X2 CrNiN 18-10	1.4311	(TP)304LN	S30453
X2 CrNi 19-11	1.4306	(TP)304L	S30403
		CF-3	J92500
X4 CrNi 18-10	1.4301	(TP)304	S30400

Dissimilar metals (mild and low alloyed steel to stainless steel)

Build-up welding on mild and low alloyed steel

Packaging and available sizes

Unit type	Diameter (mm)				
	1.2	1.6	2.0	2.4	3.2
5 kg tube	X	X	X	X	X

Other sizes and packaging on request

Lincoln TIG 309LSi: rev. EN 02

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Lincoln TIG 309L

Stainless steel solid rod

Classification

AWS A5.9 : ER309L
ISO 14343-A : W 23 12 L

General description

Solid rod for welding stainless steel to carbon steel

Shielding gases (acc. ISO 14175)

I1 Inert gas Ar (100%)

Chemical composition (w%), Typical, rod

C	Mn	Si	Cr	Ni	Mo
0.010	1.65	0.35	24	13	0.05

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)
Typical values	I1	AW	390	600	35

Materials to be welded

Steel grades	EN 10088-1/-2	Mat. Nr	ASTM/ACI A240/A312/A351	UNS
--------------	---------------	---------	----------------------------	-----

Corrosion resistant cladsteels

X2 CrNiN 18-10	1.4311	(TP)304LN	S30453
X2 CrNi 19-11	1.4306	(TP)304L CF-3	S30403 J92500
X4 CrNi 18-10	1.4301	(TP)304	S30400

Dissimilar metals (mild and low alloyed steel to stainless steel)

Build-up welding on mild and low alloyed steel

Packaging and available sizes

Unit type	Diameter (mm)		
	1.6	2.0	2.4
5 kg tube	X	X	X

Other sizes and packaging on request

Lincoln TIG 309L: rev. EN 02

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Lincoln MIG 307

Stainless steel solid wire

Classification

AWS A5.9 : ER307*
ISO 14343-A : G 18 8 Mn

* Nearest classification

General description

Solid wire for welding steel with difficult weldability
Often used as a buffer layer in hardfacing applications

Shielding gases (acc. ISO 14175)

M12 Mixed gas Ar+ 0.5-5% CO₂
M13 Mixed gas Ar+ 0.5-3% O₂

Chemical composition (w%) typical wire

C	Mn	Si	Cr	Ni
0.08	7.1	0.8	19.2	9

Mechanical properties, typical, all weld metal

	Shielding gas	Condition	0.2% Proof strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
						+20°C	-120°C
Typical values	M12	AW	400	630	40	80	50

Materials to be welded

Various steel grades, such as:

- Armour plate
- Hardenable steels including steels difficult to weld
- Non-magnetic steels
- Work hardening austenitic manganese steels
- Dissimilar joints (CMn-steels to stainless steels)

Packaging and available sizes

Unit type	Diameter (mm)	
	1.0	1.2
15 kg spool BS300	X	X
200kg Accutrak® Drum	X	X
Other sizes and packaging on request		

Lincoln MIG 307: rev. EN 02

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request